FACT SHEET FOR STATE WASTE DISCHARGE PERMIT ST-5382

Oregon Potato Company

d/b/a

Washington Potato Company

SUMMARY

Washington Potato Company operates a potato dehydration facility in the City of Warden (Grant Co.), which is located approximately 20 miles southeast of Moses Lake. The facility operates year around and makes dehydrated potato products like flakes, flour, and cubes. Process wastewater is collected, screened, and sent to a clarifier before being discharged in the City of Warden's industrial wastewater treatment facility. The treatment facility was designed and is operated to collect and treat process wastewater from Washington Potato and two other processors; potatoes and milk. No sanitary wastewater is discharged into the industrial system.

The proposed permit will continue all wastewater sampling and testing as required in the current permit. The proposed permit will require the submittal of an Operations and Maintenance manual for the onsite treatment system, and updates to the spill and solid waste plans.

The permit requires the installation of a buffering system to bring the pH of the final effluent into compliance with regulatory requirements. Interim performance-based pH limitations will be in place until the buffering system is brought on-line.

Limitations on the flow from the facility to the city of Warden's industrial wastewater system will be unchanged.

The proposed permit will require the Permittee to evaluate and implement ways to reduce the amount of process waste solids that are removed from the process line and re-introduced into the process wastewater stream. These best management practices and pollution prevention measures will better define AKART for the Permittee's onsite treatment system, and potentially improve the pH of the final effluent.

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INTRODUCTION

This fact sheet is a companion document to the draft State Waste Discharge Permit No. ST-5382. The Department of Ecology (the Department) is proposing to re-issue this permit, which will allow discharge of wastewater to the city of Warden's industrial wastewater treatment facility. This fact sheet explains the nature of the proposed discharge, the Department's decisions on limiting the pollutants in the wastewater, and the regulatory and technical bases for those decisions.

Washington State law (RCW 90.48.080 and 90.48.160) requires that a permit be issued before discharge of wastewater to waters of the state is allowed. This statute includes commercial or industrial discharges to sewerage systems operated by municipalities or public entities which discharge into public waters of the state. Regulations adopted by the state include procedures for issuing permits and establish requirements which are to be included in the permit (Chapter 173-216 WAC).

This fact sheet and draft permit are available for review by interested persons as described in Appendix A—Public Involvement Information.

The fact sheet and draft permit have been reviewed by the Permittee. Errors and omissions identified in these reviews have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Changes to the permit will be addressed in Appendix D — Response to Comments.

GENERAL INFORMATION	
Applicant	Oregon Potato Company
Facility Name and Address	Washington Potato Company P.O. Box 2248 Warden, WA 98857
Type of Facility:	Potato dehydrator
Facility Discharge Location	Latitude: 46° 57' 14" N Longitude: 119° 03' 42" W.
Treatment Plant Receiving Discharge	City of Warden Industrial Wastewater Treatment Facility
Contact at Facility	Name: Bob Bernard Telephone #: 509.349.8803
Responsible Official	Name: Bob Bernard Title: Plant Manager FAX #: 509.349.2362

BACKGROUND INFORMATION

DESCRIPTION OF THE FACILITY

Washington Potato Company is located along the western boundary of the town of Warden (Grant Co.) which is approximately 20 miles SE of Moses Lake; Fig. 1. Freshly harvested or stored potatoes are trucked to the facility where they are processed into dehydrated products that include flakes, cubes, and flour. The facility has been operational for over 25 years.

INDUSTRIAL PROCESSES

The raw potatoes are flumed from the central receiving area into the main processing facility. During the fluming process the potatoes are washed. The wash/flume water is reused as much as possible but when the dirt/sand content gets too high, it is discharged to one of two unlined evaporation/seepage ponds; Fig 1 and 2. The ponds are alternately used with one receiving flume water while the other is allowed to de-water via seepage and evaporation. The solids are removed approximately every three years. The flume water flow has been estimated to be approximately 17,000 gpd.

When the raw potatoes enter the production facility they are directed to one of two production lines; flake or DHF line. Each has its own process but both steam peel and blanch the potato during the process. Information presented in the permit application shows that approximately 150,000 tons of potatoes are processed annually into approximately 30,000 tons of product.

At various times throughout the day the process lines are cleaned and sanitized. These processes utilize commercial products that are generally comprised of acids (acetic), caustics (sodium and potassium hydroxide), and chlorinated compounds (sodium hypochlorite).

TREATMENT PROCESSES

All process wastewater is collected in a floor drain system and gravity flows to a main collection wet well. The wastewater is pumped from the wet well to a static screen to remove the larger solids. The water is then sent to a clarifier and finally to the city of Warden's industrial wastewater treatment facility. Two other processors discharge to the city's treatment system; Ochoa Foods (potato processor) and Country Morning Farms (milk packaging).

The solids that are removed by the clarifier are dewatered via a vacuum filter drum. The dewatered solids and the solids that are removed by the screen are trucked off-site for cattle feed.

A cyclone-type of starch recovery system is used to collect starch from a portion of the waste stream from both the flake and DHF lines before it is discharged to the floor drain system.

No sanitary wastewater is discharged into the process wastewater stream.

<u>Clarifier replacement</u>

In March 1999 construction was completed on the replacement of a 60ft diameter clarifier with a 35ft structure. The purpose of the replacement was an attempt to improve the pH (increase the pH) of the effluent to levels of 5.0 s.u. or greater. Effluent pH values from the larger diameter clarifier were approximately 3.9 s.u.

TREATMENT CHANGES

Negotiations are currently ongoing between the city of Warden and Ochoa Foods that will result in a significant change in the operations and maintenance of the treatment facility, as well as its ownership. Upon completion of an agreement, the O&M of the industrial treatment facility would be transferred from the city to a private entity called, OB-3 Resource Management, LLC. The agreement will also include a time table for the eventual transfer of ownership of the facility to OB-3.

In addition, the agreement will allow OB-3 to invest in an upgrade of the treatment facility which will include installing a six mile pipeline that would transport the wastewater from the existing facility to a new 3500 sprayfield site located in Adams County, and a new lined winter storage impoundment at the sprayfield site. Some of the city's current facultative lagoons will continue to be used for flow stabilization, treatment, and storage. The preliminary design for the upgrade is to handle a flow of 2 0 MGD. A tentative schedule for the upgrades is for most of the construction to start and be completed in 2006.

All current dischargers to the industrial wastewater treatment facility will continue to discharge to the system after the upgrades are completed.

STORMWATER

Stormwater from the paved section of the parking lot by the offices and truck scales is collected and sent to the discharge line from the clarifier. According to the permit application, the facility does not have a state general permit for the discharge of stormwater

PERMIT STATUS

The previous permit for this facility was issued on February 12, 2002.

An application for permit renewal was submitted to the Department on October 7, 2005 and accepted by the Department on November 2, 2005.

SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

During the history of the previous permit, the Permittee has generally been in compliance with discharge limitations based on Discharge Monitoring Reports (DMRs). The facility violated the average discharge flow limit (652,350 gpd) in October 2004 and the total annual limit (209.7 MG) for 2004; Addendum 1.

Washington Potato has not complied with several reporting requirements in the current permit:

1. Section S4.A of the permit required the submittal of an O&M manual by July 1, 2002. To date, no report has been submitted.
2. Section S8.A required the Permittee to inform Ecology that a 24hr composite sampler for the effluent had been installed. Until the time when this Fact Sheet was prepared, no correspondence was received regarding the installation of the compositor. Recent information from the Permittee revealed that a composite sampler was installed in April 2002. But, the sampler has not worked properly since its installation and the problem(s) were never resolved.

3. Section S8.C required the Permittee to submit with the permit application the continuous monitoring records for effluent pH for the last three years; these were not submitted. A phone conversation with the Permittee's staff person responsible for submitting the monthly DMRs revealed that all weekly monitoring graphs are available upon request.

WASTEWATER CHARACTERIZATION

The concentration of pollutants in the discharge was reported in the permit application. The proposed wastewater discharge is characterized for the following parameters:

Parameter	Concentration
BOD_5	Range: 1110 - 3120 mg/L; avg = 2152
TSS	Range: 85 - 720 mg/L; avg = 384
pH	Range: 4.3 – 5.9 s.u.
TKN (as N)	Range: 78 – 186 mg/L; avg = 133

The average values given in the permit application for BOD_5 and TKN are similar to the values based on the wastewater monitoring data submitted in monthly DMRs for the period March 2002 through November 2005; Addendum 1. The average BOD_5 and TKN load values from the processing facility to the city's system are 10,835 and 692 lbs/day, respectively. Maximum and minimum pH values were within permit limitations.

Effluent Flow

Average effluent flow values ranged from 282,000 to 755,000 gpd for the period March 2002 – November 2005; Addendum 1. Maximum daily values ranged from 400,000 to 910,000 gpd. Many of the average flow values and most all of the maximum daily values exceed the design value used for the current 35ft clarifier (500,000 gpd) that is given in the 1998 engineering report. However, the higher flows did not result in exceeding the design hydraulic load of the clarifier (600 gpd/ft^2; Mactec-Meier, 1998). An average daily effluent flow of 535,400 gpd (Addendum 1) results in a clarifier hydraulic load of 560 gpd/ft^2.

Flume Water

The current permit requires sampling of the flume water (4/year) and monitoring of the flow (daily) to the evaporation/seepage pond. TKN values ranged from 23 to 442 mg/L with an average value of 180 mg/L; Addendum 1. The low nitrate concentration (< 0.2 mg/L) suggests that the nitrogen load is comprised of organic and ammonia nitrogen. The TDS concentration is well above the ground water standard (500 mg/L), and the pH of the water is near neutral.

The constant flow value reported for each month (17,500 gpd) is because values are estimated by using the volume of the flume water wetwell and the number of times it is pumped to the ponds.

Based on the flume flow, average total solids concentration, and operating 320 days per year, it was estimated that approximately 430,000 lbs of solids (dirt, sand, etc.) is sent to the ponds each year.

PROPOSED PERMIT LIMITATIONS

State regulations require that limitations set forth in a waste discharge permit must be based on the technology available to treat the pollutants (technology-based) or be based on the effects of the pollutants to the city's industrial system. Wastewater must be treated using all known, available, and reasonable treatment (AKART) and not interfere with the operation of the cities industrial wastewater treatment facility.

The minimum requirements to demonstrate compliance with the AKART standard and specific design criteria for this facility was determined in the engineering report; Mactec-Meier, 1998.

The more stringent of the local limits-based or technology-based limits are applied to each of the parameters of concern. Each of these types of limits is described in more detail below.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

All waste discharge permits issued by the Department must specify conditions requiring available and reasonable methods of prevention, control, and treatment of discharges to waters of the state (WAC 173-216-110). There are no federal categorical pre-treatment limitations for this facility as listed under 40 CFR , Part 407.54, Pretreatment Standards for Existing Dehydrated Potato Products processing facilities. However, all dischargers for the category must comply with the requirements in 40CFR, Part 403, General Pretreatment Regulations for Existing and New Sources of Pollution.

These general regulations include: discharges shall not cause pass through or interference with the treatment facility; shall not cause corrosive damage; shall not create a fire or explosive hazard; shall not cause toxic gases that may be harmful to treatment facility workers. All prohibited discharges (40 CFR, Part 403.5) will be listed in the proposed permit.

pH LIMITATION

The pH limitation in the current permit (3.5 s.u.) is a performance-based limit that was determined using pH data for the effluent from the replaced 60ft diameter clarifier; Jan 1996 – July 2001. The city agreed to allow a performance-based pH limitation to be put into the permit. A rank/percentile statistical analysis was used to estimate the 98th percentile pH value which was used as the minimum pH limitation.

Since the installation of the new 35ft clarifier (Addendum 1) the effluent pH has not improved to levels $\geq$ 5 s.u. as was designed for (Mactec-Meier, 1998). The engineering report stated that if the new clarifier did not improve the effluent pH, then an automatic buffer system (magnesium hydroxide) would be installed.

The proposed permit will require the installation of an automatic buffering system to bring the minimum effluent pH to levels greater or equal to 5 s.u. as described in the 1998 engineering report.

An updated performance-based, lower limitation for pH was done using effluent data from the new clarifier; Appendix C and Addendum 1. The estimated 98th percentile effluent pH value is approximately 3.6 s.u. and will be used in the proposed permit. This value will be an interim limit and will be effective until the automatic buffering system is brought on-line.

A similar requirement to improve effluent pH may be needed for Ochoa Foods when their permit is re-issued.

EFFLUENT LIMITATIONS BASED ON LOCAL LIMITS

Unlike a municipal wastewater treatment facility that is designed primarily to treat sanitary wastewater, the city's industrial wastewater treatment facility was specifically designed and is managed to treat the process wastewater from Washington Potato. The only known local limit is for the total annual flow (209.7 MG), which according to a letter (dated December 27, 199) from the city's consultant, would be adopted into the local pretreatment ordinance.

COMPARISON OF LIMITATIONS WITH THE EXISTING PERMIT ISSUED IN 2002

	Existing Limits	Proposed Limits
Average flow for the max month:	652,350 gpd	652,350
Max. daily flow	965,000 gpd	965,000 gpd
Total annual flow	209.7 MG	209.7 MG
pH	shall be $\geq$ 3.5 and $\leq$ 11 s.u.	**Interim:** shall be $\geq$ 3.6 and $\leq$ 11 s.u. **Final:** shall be $\geq$ 5 and $\leq$ 11 s.u.

The limitations in the current permit for the average monthly and daily maximum flow are based on values given in the 1994 and 2001 permit applications. The 2005 application shows a value of 755,000 gpd (max monthly) and 910,000 gpd (max daily). A review of the DMR data shows these values occurred during the March 2002 – November 2005 time period; Addendum 1.

The 1998 engineering report does not define a design flow for the onsite treatment system. The only value used in the report (500,000 gpd) was to evaluate the need and performance of a smaller clarifier. The city of Warden used a flow value of 550,000 gpd from Washington Potato for the design of the 2000 upgrade of the city's treatment facility; City of Warden, 1999. This value was based on operating 280 days/year. Using a simple ratio, the flow for operating 320 days/year would be 628,571 gpd, which is close to the current flow limit.

It has been decided to "rollover" the existing flow limitations into the new permit. They more closely meet the design flows for the onsite treatment system and flows for the city's treatment system. A supporting reason for keeping the flow limits unchanged is that the design of the proposed upgrades by OB-3 has taken into account the flows from the current processors over the past five years.

MONITORING REQUIREMENTS

Monitoring, recording, and reporting are specified to verify that the treatment process is functioning correctly, and that effluent limitations are being achieved (WAC 173-216-110).

The monitoring schedule is detailed in the proposed permit under Condition S2. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

The monitoring requirements for the wastewater and flume water in the current permit will be extended to the proposed permit. Nitrate testing for the flume water will be eliminated given its low concentration.

Water samples collected in June 2004 by the city from two of their drinking water wells showed the presence of ethylene di-bromide (EDB) in concentrations above the drinking water standard's maximum contaminant level (MCL = 0.05 ppb). EDB was used as a soil fumigant until 1984 when it was banned for this use by EPA. One of the city wells that showed EDB is located near Washington Potato. The source of the EDB in the city's wells has not been found.

To help validate that EDB is not in the flume water, the proposed discharge permit will require some limited amount of EDB testing of the flume water. Samples will be collected in the Spring and late Fall to represent the wash water from stored and freshly harvested potatoes.

Two samples (Spring and late Fall) will also be collected from the effluent to determine if EDB is in the process wastewater being sent to the city's system. Seepage from the city's lagoons is another potential source of EDB to the ground water.

OTHER PERMIT CONDITIONS

REPORTING AND RECORDKEEPING

The conditions of S3 are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-216-110 and 40 CFR 403.12 (e),(g), and (h)).

OPERATIONS AND MAINTENANCE

The proposed permit contains condition S.5 as authorized under Chapter 173-240-150 WAC and Chapter 173-216-110 WAC. It is included to ensure proper operation and regular maintenance of equipment, and to ensure that adequate safeguards are taken so that constructed facilities are used to their optimum potential in terms of pollutant capture and treatment.

The proposed permit will require the submission of an O&M manual for the facility's wastewater system. A manual was required in the current permit but has not been submitted.

The manual shall include the O&M for: 1) the 24hr composite sampler; 2) the continuous monitoring effluent pH monitoring and control equipment; and, 3) clarifier.

24HR EFFLUENT COMPOSITE SAMPLER

The previous permit required the installation and use of a 24hr composite sampler for the effluent by July 1, 2002. Current information from the Permittee indicates that a sampler is on-site but has not functioned properly since it was purchased in 2002.

The Permittee will be required to bring the composite sampler on-line and inform Ecology when this occurs.

PROHIBITED DISCHARGES

Certain pollutants are prohibited from being discharged to the city's industrial wastewater system. These include substances which cause pass-through or interference, pollutants which may cause damage to the system or harm to the city's workers (Chapter 173-216 WAC) and the discharge of designated dangerous wastes not authorized by this permit (Chapter 173-303 WAC).

DILUTION PROHIBITED

The Permittee is prohibited from diluting its effluent as a partial or complete substitute for adequate treatment to achieve compliance with permit limitations.

SOLID WASTE PLAN - UPDATE

This proposed permit requires, under the authority of RCW 90.48.080, that the Permittee update their solid waste plan designed to prevent solid waste from causing pollution of the waters of the state and submit it to the Department. The permit application shows that the Permittee has a plan, but it is unknown how old it is and Ecology does not have a record of it being submitted.

The plan will describe all measures that will be taken to insure that leachate from any process solid wastes on-site or transported off-site to any location, by the Permittee or private hauler, will not enter any surface or ground water.

SPILL PLAN - UPDATE

The Department has determined that the Permittee stores a quantity of chemicals (caustics; acids; chlorinated compounds) that has the potential to cause water pollution if accidentally released. The Department has the authority to require the Permittee to develop best management plans to prevent this accidental release under section 402(a)(1) of the Federal Water Pollution Control Act (FWPCA) and RCW 90.48.080.

The Permittee indicated in the permit application that the facility has a Spill Prevention, Control, and Countermeasure Plan. The age of the plan is unknown and Ecology has no record of it being submitted. The proposed permit requires the Permittee to update this plan and submit it to the Department.

It is recommended that the requirements listed for "Contingency plan and emergency procedures" given in the state's dangerous waste regulations (WAC 173-303-350) be used as guidance when preparing the spill plan update. It is understood that the dangerous waste regulations do not apply to Washington Potato.

BEST MANAGEMENT PRACTICES / POLLUTION PREVENTION

Information presented in the engineering report (Mactec-Meier, 1998) showed that a large quantity of solid wastes that are generated at the facility are discharged into the process wastewater stream instead of being collected at the point of generation and managed as a solid waste. Approximately 113,000 lbs/day of solid waste is produced from the flake line and discharged into the process waste stream, and approximately 54,000 lbs/day is produced from the DHF line and discharged.

State law requires that all dischargers are required to provide AKART (all known, available, and reasonable methods of treatment, prevention, and control) to their waste streams prior to discharge (RCW 90.48.010). Washington Potato provides some treatment (screening and settling) prior to discharging to the city's treatment system, but discharging solid wastes that are collected from the process line back into the waste stream is not considered prevention and control.

AKART is meant to be a technology-based requirement that is conditioned by a judgement of reasonableness, and includes the use and implementation of best management practices (BMPs) and pollution prevention (P2) to provide control and prevention of pollutants from entering the environment. Allowing process waste solids from the flake and DHF lines that have been physically removed from the potato (peel from scrubbers) or that have fallen or been screened from the production line to enter the process waste stream is not considered a BMP or P2.

Removing what appears to be a very large amount of organic material from the waste stream could also have a positive affect on the pH of the final effluent. A lower organic load to the clarifier could reduce the production of organic acids in the clarifier, both in the water and sludge.

The permit will require Washington Potato to investigate, develop, and implement ways to reduce and/or eliminate process solid wastes from entering the process wastewater stream. According to information presented in the engineering report, efforts need to be directed to solids generated at and discharged to the wastewater stream at:

1. flake line: peel scrubber; cutter waste; waste mash
2. DHF line: peel scrubber; sorters; dryer

This information from this evaluation will be presented as an addendum to the engineering report.

GENERAL CONDITIONS

General Conditions are based directly on state laws and regulations and have been standardized for all industrial waste discharge to POTW permits issued by the Department.

Condition G1 requires responsible officials or their designated representatives to sign submittals to the Department. Condition G2 requires the Permittee to allow the Department to access the treatment system, production facility, and records related to the permit. Condition G3 specifies conditions for modifying, suspending or terminating the permit. Condition G4 requires the Permittee to apply to the Department prior to increasing or varying the discharge from the levels stated in the permit application. Condition G5 requires the Permittee to construct, modify, and

operate the permitted facility in accordance with approved engineering documents. Condition G6 prohibits the Permittee from using the permit as a basis for violating any laws, statutes or regulations. Conditions G7 and G8 relate to permit renewal and transfer. Condition G9 requires the Permittee to control production or wastewater discharge in order to maintain compliance with the permit. Condition G10 prohibits the reintroduction of removed pollutants into the effluent stream for discharge. Condition G11 requires the payment of permit fees. Condition G12 describes the penalties for violating permit conditions.

PUBLIC NOTIFICATION OF NONCOMPLIANCE

A list of all industrial users which were in significant noncompliance with Pretreatment Standards or Requirements during any of the previous four quarters may be annually published by the Department in a local newspaper. Accordingly, the Permittee is apprised that noncompliance with this permit may result in publication of the noncompliance.

RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics. The Department proposes that the permit be issued for five years.

REFERENCES FOR TEXT AND APPENDICES

City of Warden, 1999. Industrial Wastewater Treatment Facility. Document dated August 3, 1999, in response to Ecology comments.

Mactec-Meier Associates, LLC, 1998. Engineering Report for Washington Potato Primary Wastewater Treatment. Revised May.

Washington State Department of Ecology.

Laws and Regulations(http://www.ecy.wa.gov/laws-rules/index.html)

Permit and Wastewater Related Information
(http://www.ecy.wa.gov/programs/wq/wastewater/index.html

APPENDICES

APPENDIX A—PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to reissue a permit to the applicant listed on page 1 of this fact sheet. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

Public notice of application was published on November 8 and 15, 2005 in the Columbia Basin Herald to inform the public that an application had been submitted and to invite comment on the reissuance of this permit.

The Department will publish a Public Notice of Draft (PNOD) on February 16, 2006 in the Columbia Basin Herald to inform the public that a draft permit and fact sheet are available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments should be mailed to:

Water Quality Permit Coordinator
Department of Ecology
4601 North Monroe Street
Spokane, WA 99205-1295

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the thirty (30) day comment period to the address above. The request for a hearing shall indicate the interest of the party and reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-216-100). Public notice regarding any hearing will be circulated at least thirty (30) days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing.

Comments should reference specific text followed by proposed modification or concern when possible. Comments may address technical issues, accuracy and completeness of information, the scope of the facility's proposed coverage, adequacy of environmental protection, permit conditions, or any other concern that would result from issuance of this permit.

The Department will consider all comments received within thirty (30) days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, 509.329.3524, or by writing to the address listed above.

The Fact Sheet and permit were written by Don Nichols.

APPENDIX B—GLOSSARY

Ammonia—Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Average Monthly Discharge Limitation—The average of the measured values obtained over a calendar month's time.

Best Management Practices (BMPs)--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD_5--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD_5 is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass—The intentional diversion of waste streams from any portion of the collection or treatment facility.

Categorical Pretreatment Standards—National pretreatment standards specifying quantities or concentrations of pollutants or pollutant properties which may be discharged to a POTW by existing or new industrial users in specific industrial subcategories.

Composite Sample—A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite"(collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots.

Continuous Monitoring –Uninterrupted, unless otherwise noted in the permit.

Engineering Report—A document, signed by a professional licensed engineer, which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Grab Sample—A single sample or measurement taken at a specific time or over as short period of time as is feasible.

Industrial Wastewater—Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of

industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Interference— A discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal and;

Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), sludge regulations appearing in 40 CFR Part 507, the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

Local Limits—Specific prohibitions or limits on pollutants or pollutant parameters developed by a POTW.

Maximum Daily Discharge Limitation—The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Pass-through— A discharge which exits the POTW into waters of the-State in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation), or which is a cause of a violation of State water quality standards.

pH—The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

State Waters—Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater—That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Technology-based Effluent Limit—A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Dissolved Solids—That portion of total solids in water or wastewater that passes through a specific filter.

Total Suspended Solids (TSS)--Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

APPENDIX C — TECHNICAL CALCULATIONS

Performance-based pH limits: Rank and Percentile analysis

Effluent pH data is from March 2002 – November 2005

Point	*pH*	*Rank*	*Percent*
8	5.5	1	100.00%
22	4.7	2	93.10%
41	4.7	2	93.10%
42	4.7	2	93.10%
9	4.6	5	79.50%
10	4.6	5	79.50%
19	4.6	5	79.50%
21	4.6	5	79.50%
28	4.6	5	79.50%
36	4.6	5	79.50%
20	4.5	11	72.70%
35	4.5	11	72.70%
39	4.5	11	72.70%
7	4.4	14	50.00%
14	4.4	14	50.00%
15	4.4	14	50.00%
17	4.4	14	50.00%
25	4.4	14	50.00%
26	4.4	14	50.00%
29	4.4	14	50.00%
33	4.4	14	50.00%
40	4.4	14	50.00%
43	4.4	14	50.00%

Point	*pH*	*Rank*	*Percent*
11	4.3	24	34.00%
12	4.3	24	34.00%
16	4.3	24	34.00%
24	4.3	24	34.00%
27	4.3	24	34.00%
34	4.3	24	34.00%
38	4.3	24	34.00%
13	4.2	31	22.70%
18	4.2	31	22.70%
30	4.2	31	22.70%
44	4.2	31	22.70%
45	4.2	31	22.70%
1	4.1	36	15.90%
6	4.1	36	15.90%
37	4.1	36	15.90%
31	4	39	11.30%
32	4	39	11.30%
4	3.9	41	9.00%
5	3.8	42	6.80%
2	3.6	43	2.20%
3	3.6	43	2.20%
23	3.5	45	0.00%

APPENDIX D — RESPONSE TO COMMENTS

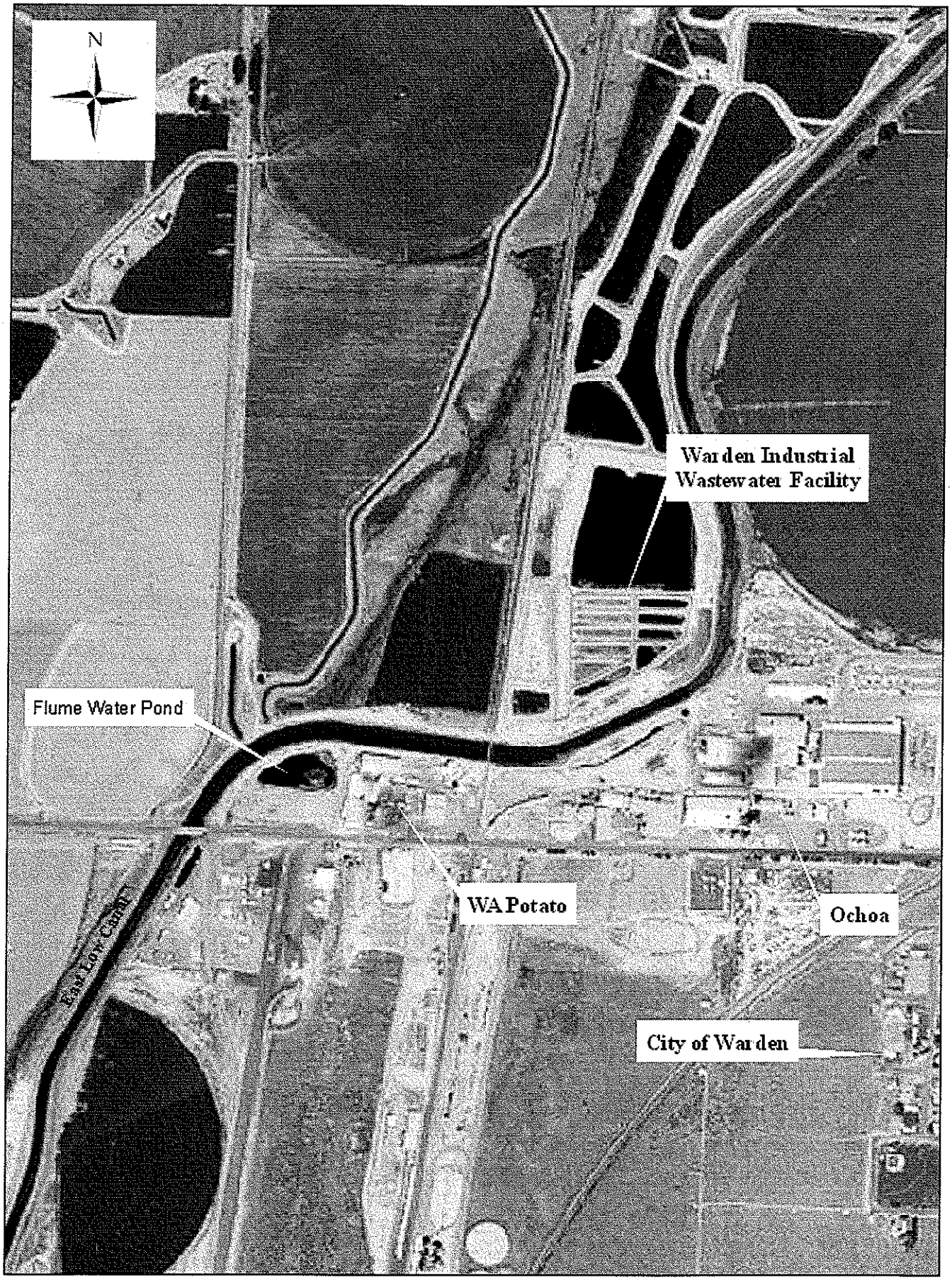

Figure 1. Washington Potato

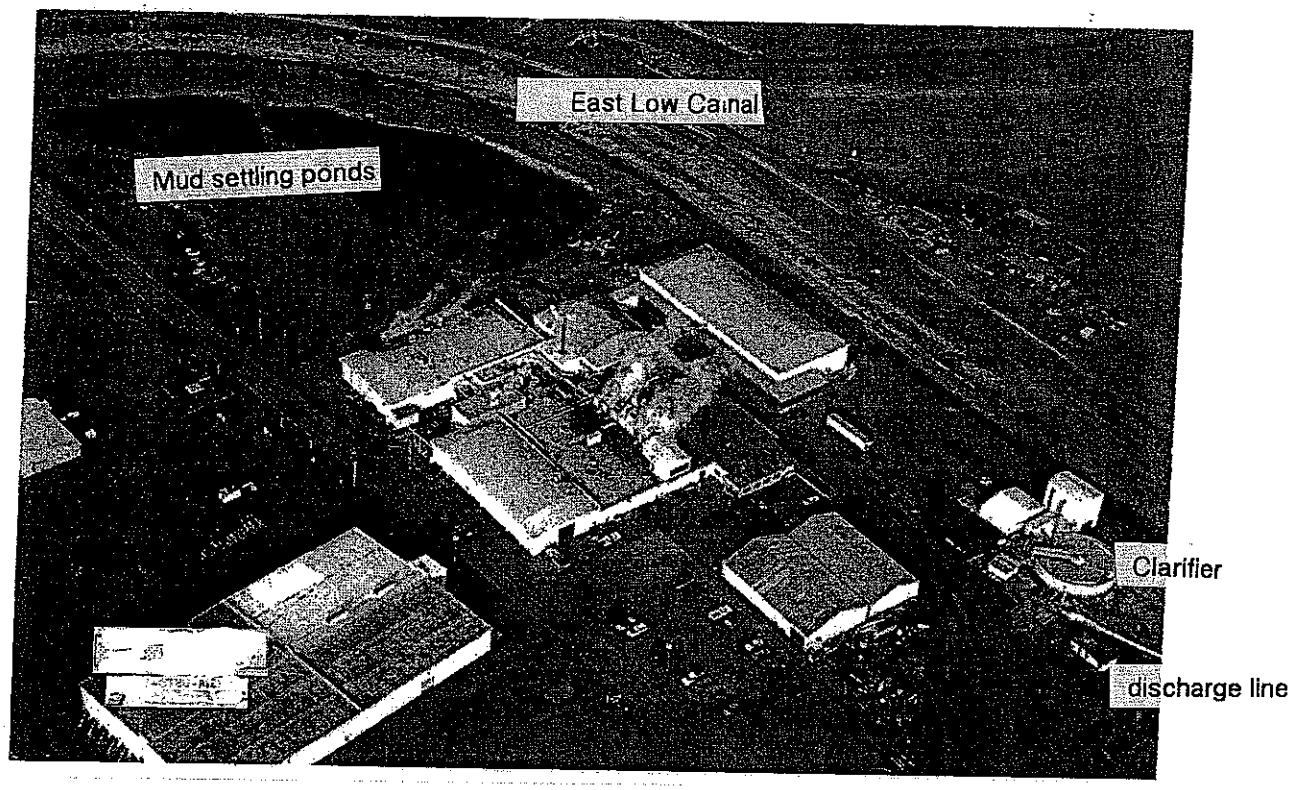

Fig. 2. Washington Potato – Site Plan

ADDENDUM 1

Washington Potato

Effluent

	BOD				FLOW						TKN (as N)			
	LBS/DAY		MG/L		AVG GPD		MAX GPD		TOA MGD		LBS/DAY		MG/L	
	Value	QLF	Value	QLF	Value	QLF	Value	QLF	Value	QLF	Value	QLF	Value	QLF
Discharge Limit:					652350		965000		209.7					
Mar-02	3706		2020		382273		600000			E	316		172	
Apr-02	8006		2400		389167		540000			E	437		131	
May-02	8517		2760		390000		590000		44 41		660		214	
Jun-02	6758		2190		365000		500000		53.79		577		187	
Jul-02	5638		2600		281904.7		400000		59 71		377		174	
Aug-02	9172		2820		396551 7		480000		71 21		507		156	
Sep-02	7448		1900		468571.4		570000		84 33		604		154	
Oct-02	8219		2190		481935		570000		99.27		578		154	
Nov-02	10321		2250		483333		610000		112.32		743		162	
Dec-02	12915		2670		501304		590000		124.35		798		165	
Jan-03	6085		1520		524516		700000		16 26		596		149	
Feb-03	11092		2660		523077		630000		29 86		630		151	
Mar-03	11356		2960		499310		590000		44 34		687		179	
Apr-03	12620		2910		530357		600000		59 19		1251		150	
May-03	12835		2700		541851		810000		73 82		889		187	
Jun-03	10884		2610		565357		700000		89.65		713		171	
Jul-03	8257		2250		530000		630000		103 96		620		169	
Aug-03	7018		1650		497741		650000		119.39		651		153	
Sep-03	7526		1920		522413 9		620000		134 5		745		190	
Oct-03	8977		1560		621290.3		860000		153.8		754		131	
Nov-03	8557		1800		605000		680000		169.53		281		59 2	
Dec-03	10749		1790		585714		770000		185.93		679		113	
Jan-04	11399		2040		628397		910000		19 38		643		115	
Feb-04	9052		1620		651153 8		810000		36 31		693		124	
Mar-04	6110		1110		619285.7		710000		53.65		433		78 7	
Apr-04	10836		1830		615909		670000		67 2		971		164	
May-04	8624		1880		597857		770000		83.9		509		111	
Jun-04	16333		2880		676429		850000		102.9		749		132	
Jul-04	11342		2720		573703		630000		118.37		692		166	
Aug-04	9016		2300		665000		800000		138.3		447		114	
Sep-04	15352		3120		682308		810000		156		915		186	
Oct-04	15012		2250		755172.4		900000		178		934		140	
Nov-04	11221		1950		573333		720000		195.16		691		120	
Dec-04	10481		2130		511724		590000		210		704		143	
Jan-05	6845		1710		470666.7		590000		14.1		444		111	
Feb-05	10238		1980		507407		700000		27.82		595		115	
Mar-05	17848		4280		533333 3		700000		43 8		938		225	
Apr-05	14428		3460		492592 6		600000		57.1		938		225	
May-05	23419		4680		525925 9		600000		71 32		836		167	
Jun-05	10061		2370		561358 4		646000		88.16		798		188	
Jul-05	13427		3500		586586.2		690000		105 2		832		217	
Aug-05	15933		3200		604129		717000		123.9		767		154	
Sep-05	16948		4040		566481 5		768000		139 2		910		217	
Oct-05	13862		3240		497451.6		616000		154 6		744		174	
Nov-05	13143		2550		510120		618000		167 4		861		167	
AVG	10835 2		2466		535400		669000				692		156	

Qualifier:
E = Analysis not done

Washington Potato

Effluent

	pH				TSS				TEMP			
	MAX S.U.		MIN S.U.		LBS/DAY		MG/l		AVG °F		MAX °F	
	Value	QLF	Value	QLF	Value	QLF	Value	QLF	Value	QLF	Value	QLF
Discharge Limit	11		5.5									
Mar-02	5.6		4.1		675		368		77		86	
Apr-02	4.96		3 6		1068		320		82		90	
May-02	5.1		3 6		1271		412		80.75		93	
Jun-02	5 4		3 9		1635		530		79.56		85	
Jul-02	5 4		3 8		651		300		78 2		91	
Aug-02	5 8		4 1		1259		387		78 8		85	
Sep-02	5 8		4 4		878		224		74 08		80	
Oct-02	6 5		5 5		732		195		67 33		81	
Nov-02	6.4		4 6		1835		400		65		72	
Dec-02	5		4.6		2781		575		75.13		79	
Jan-03	5.3		4 3		1882		470		74.9		80	
Feb-03	5		4 3		1897		455		72		75	
Mar-03	5 3		4 2		1573		410		72.3		75	
Apr-03	5 5		4 4		2485		573		68 96		75	
May-03	5 5		4 4		1997		420		67 26		73	
Jun-03	5 9		4 3		2856		685		68 07		77	
Jul-03	5 9		4 4		1578		430		64 73		69	
Aug-03	5 2		4 2		995		234		68 39		83	
Sep-03	5 8		4 6		1831		467		79.69		87	
Oct-03	5 7		4 5		2992		520		72.8		77	
Nov-03	5.7		4 6		1635		344		71 35		81	
Dec-03	5.4		4 7		2222		370		74.73		78	
Jan-04	6		3 5		2168		388		74 3		80	
Feb-04	5 7		4 3		2347		420		71 8		75	
Mar-04	5 7		4 4		468		85		73.59		80	
Apr-04	5.6		4 4		2084		352		75 9		94	
May-04	5		4 3		1330		290		77 7		82	
Jun-04	5 6		4 6		2836		500		79.7		85	
Jul-04	5 2		4 4		2231		535		83 31		92	
Aug-04	5.1		4.2		1803		460		82 37		88	
Sep-04	5 1		4		3543		720		81 84		89	
Oct-04	5 4		4		2182		327		76 85		86	
Nov-04	5 8		4 4		2262		393		74 57		79	
Dec-04	5 9		4 3		630		128		77.45		83	
Jan-05	5 4		4.5		1313		328		71 33		80	
Feb-05	6 2		4 6		1629		315		70 07		74	
Mar-05	5 9		4 1		1001		240		74 03		79	
Apr-05	5 8		4 3		2752		660		71 67		80	
May-05	5 5		4 5		6705		1340		73.33		80	
Jun-05	5.5		4 4		2165		510		74.7		80	
Jul-05	6		4 7		2072		540		72 72		78	
Aug-05	5 6		4 7		1359		273		73 81		82	
Sep-05	5.6		4 4		2475		590		74 12		82	
Oct-05	5.1		4 2		1925		450		70 71		75	
Nov-05	6		4 2		1907		370		75 32		81	
AVG					1909		429		74		81	

Washington Potato

Flume Water

	FLOW				TKN (as N)		Nitrate (AS N)		pH		Total Solids		TDS	
	AVG GPD Value	QLF	MAX GPD Value	QLF	MG/L Value	QLF	MG/L Value	QLF	S.U Value	QLF	MG/L Value	QLF	MG/L Value	QLF
Mar-02	17500		17500											
Apr-02	17500		17500											
May-02	17500		17500		141		0.07	F	6.96			E	1320	
Jun-02	17500		17500											
Jul-02	17500		17500											
Aug-02	17500		17500		22.5		0.07	F	7.18		348		3700	
Sep-02	17500		17500											
Oct-02	17500		17500											
Nov-02	17500		17500		262		0.07	F	6.2		26500		3040	
Dec-02	17500		17500											
Jan-03	17500		17500											
Feb-03	17500		17500		169		0.39		6.75		10700		944	
Mar-03	17500		17500											
Apr-03	17500		17500											
May-03	17500		17500		284		0.07	F	6.46		13600		28500	
Jun-03	17500		17500											
Jul-03	17500		17500											
Aug-03	17500		17500		86		0.41		6.87		3300		994	
Sep-03	17500		17500											
Oct-03	17500		17500											
Nov-03	17500		17500		41.4		0.07	F	6.59		1800		442	
Dec-03	17500		17500											
Jan-04	17500		17500											
Feb-04	17500		17500		89.5		0.07	F	6.65		7600		700	
Mar-04	17500		17500											
Apr-04	17500		17500											
May-04	17500		17500		71.4		0.13		7.15		3900		963	
Jun-04	17500		17500											
Jul-04	17500		17500											
Aug-04	17500		17500		120		0.07	F	6.56		1000		16500	
Sep-04	17500		17500											
Oct-04	17500	X	17500	X										
Nov-04	17500		17500		353		0.07	F	6.34		28400		1800	
Dec-04	17500	X	17500	X										
Jan-05	17500	X	17500	X										
Feb-05	17500	X	17500	X	38.3		0.14		6.78		4800		688	
Mar-05	17500	X	17500	X										
Apr-05	17500	X	17500	X										
May-05	17500	X	17500	X	442		0.1		6.29		10400		4830	
Jun-05	17500	X	17500	X										
Jul-05	17500	X	17500	X										
Aug-05	17500	X	17500	X	353		0.07	F	6.38		6500		1150	
Sep-05	17500	X	17500	X										
Oct-05	17500	X	17500	X										
Nov-05	17500	X	17500	X	231		0.07	F	6.81		9500		1510	
Average					180		0.12				9168		4472	

Qualifiers:
F = less than
X = estimated
E = Analysis not done

Washington Potato – Approximate Permit Actions Timeline

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
2006					Issue permit				24hr effluent composite sampler		O&M manual	
2007	Comply with final pH limits	Solid Waste Plan – Update Spill Plan - Update								Eng. Rpt - Addendum		
2008												
2009												
2010											Permit App.	
2011												